

This document, one of a series dealing with exceptional children in the Primary and Junior divisions, presents information and suggestions that will assist teachers to adapt the content and teaching strategies of *The Formative Years* to meet the needs of children with learning disabilities. It will also be of interest to teachers in the Intermediate Division.

OHEC
371-909713
059DE/A
Box 2

Children With Learning Disabilities

Writing Team

Miss Irene Bettiol
Education Officer
Ministry of Education
Toronto

Dr. Burton Borthwick
Education Officer
Ministry of Education
Toronto

Mr. Arnold Camiletti
Education Officer
Ministry of Education
Thunder Bay

Mrs. Noreen Hardwick
Teacher
Child Development Clinic
Hospital for Sick Children
Toronto

Mr. Clive Hodder
Education Officer
Ministry of Education
Toronto

Mrs. Jean Joyner
Diagnostician
Lincoln County
R.C.S.S. Board
St. Catharines

Mrs. D. Laverne
Special Education Consultant
Ottawa R.C.S.S. Board
Ottawa

Mr. Thom Norris
Special Education Consultant
Etobicoke Board of Education
Etobicoke

Mr. Peter Tkachyk
Consultant
Lincoln County
R.C.S.S. Board
St. Catharines

Mrs. Pat Vance
Resource Teacher
Lawrence Park C.I.
Toronto



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In order to provide appropriate instruction for pupils with learning disabilities, teachers must have a thorough working knowledge of normal child development. This is described in *Education in the Primary and Junior Divisions* (Toronto: Ministry of Education, Ontario, 1975), which deals with the optimal development of the individual child:

Before interpreting the difficulties of children with communication exceptionalities (including learning disabilities), the teacher must know how most children normally acquire and use representation and symbols and how they communicate through gesture, movement, play, picture, and language. Such knowledge provides a necessary basis for choosing appropriate learning activities for children with difficulties.

Education in the Primary and Junior Divisions, page 12.

The objectives of special services or curricula are no different from those outlined for all children in the Primary and Junior divisions. The purpose of this support document is to focus on the prerequisites to the growth of children with learning disabilities – the teacher's awareness of each child's individual needs, and superior, creative teaching methodology.

Teachers of children with learning disabilities require:

- *knowledge* of many approaches in order to find the best way of matching a pupil's strengths and needs with various facets of the curriculum;
- an *awareness* of each pupil's experiences, interests, feelings, environmental background, developmental levels, strengths, needs, preferred learning style(s), tolerance of new or challenging situations, and adjustment to his/her world. Teachers must help each pupil develop a positive self-concept. Only as teachers come to identify deeply with the feelings of each of their pupils, can they truly understand the pupil's behaviour and capacities. In turn, pupils begin to acquire balance and self-possession by telling and sharing.

Teachers of these children should also be sensitive to:

- a) the way in which a task is presented to pupils,
- b) the time needed by pupils to complete each task,
- c) the importance of adjusting curriculum tasks to suit the ability and interest of the learner,
- d) the ways in which each pupil can best approach academic tasks,
- e) the importance of success for each learner.



The Ministry of Education defines learning disabilities as: disorders in one or more of the processes involved in understanding or using symbols or spoken language. The disorders result in a significant discrepancy between academic achievement and assessed intellectual ability, with deficits in at least one of the following areas:

- receptive language (i.e., listening, reading);
- language processing (i.e., thinking, conceptualizing, integrating);
- expressive language (i.e., talking, spelling, writing); and
- mathematical computations.

Such deficits become evident in both academic and social situations.

The definition does not include children who have learning problems that are primarily the result of impairment of vision or hearing; motor handicaps; mental retardation; primary emotional disturbance; or environmental, cultural, or economic disadvantage.

Although the definition is designed to address *specific* learning disabilities, these do not constitute an easily describable, homogeneous group. Specific learning disabilities is a term which, although it clearly attempts to be specific, still covers many heterogeneous and complex characteristics.

In some cases terminology obscures a topic instead of clarifying it. For this reason teachers confronted for the first time with learning disabilities “jargon” may understandably find the experience unsettling. It is important to remember, however, that the terms used to describe learning disabilities are dealing with learning characteristics with which teachers have always worked. “Auditory sequential memory”, for example, indicates the ability to remember things heard in a certain order. “Visual-motor integration” is “co-ordination” by another name. The meanings of all the formal terms used in this document are defined in the glossary at the end.

The Ministry definition, since it defines *disabilities*, is deficit-oriented. It should be remembered, however, that a pupil’s learning disabilities define only a part of him/her. They do not constitute the whole child. Each pupil has a distinct profile of abilities and disabilities. The nature of the basic disability will determine whether there is one deficit area or many. For example, an oral comprehension problem will lead to difficulties in other areas, whereas an inability to communicate in writing may not.

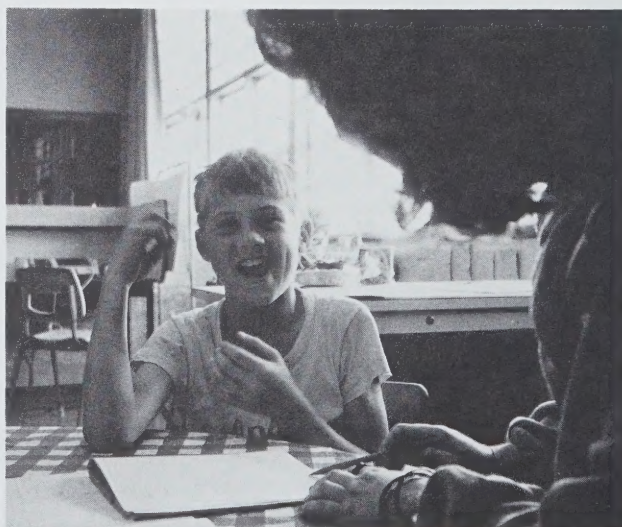
The degree of a child’s learning disability is also important. *Students with mild forms of learning disabilities* can be served very adequately within the regular classroom, if the teacher uses carefully chosen approaches. A special education consultant or resource teacher can help the classroom teacher select and organize materials and instructional approaches that are suited to the needs of these students, both in the initial stages of the program and as the need arises later on.

Students with moderate forms of learning disabilities will probably require assistance outside of the regular classroom on a part-time basis. This assistance should be available on an individual or small-group basis for part of the day. A resource room teacher, itinerant special education teacher, or classroom assistant should be assigned to schools, depending on the need.

Students with severe forms of learning disabilities usually require placement in a special education class or an alternative school for children with learning disabilities.

Whatever the nature and degree of a pupil’s learning disabilities may be, however, his/her strengths have the most immediate and important implications for instruction. Particularly at the outset, teaching should be to these strengths. Remediation of a weak modality should be planned with great care and with due attention paid to the severity of the disability. With a very few severely disabled learners, concentration on the strongest modality may prove to be the only justifiable course to pursue.

Although the field of learning disabilities is not solely an educational responsibility, it is true that in some cases learning disabilities only show up markedly in school. The “invisible handicap” is therefore very much the business and concern of teachers, who have unique opportunities to intervene and help. The following sections are designed to assist teachers in developing appropriate identification, assessment, and teaching methods.



Early Identification

School boards in Ontario must have established procedures for identifying the learning abilities and needs of all children at the time of their entry to Kindergarten or Grade 1. These procedures should include the collection of developmental health and/or social data, information-sharing by parents and teacher, the teacher's educational assessment, and a multidisciplinary assessment, where necessary, involving professionals outside the classroom. Where a child's language is other than English or French, a reasonable delay in the language-based aspects of assessment should be considered.

These early-identification procedures are essential for all children and particularly for the successful development of children with learning disabilities. Their purposes include:

- identifying children's needs and abilities, and
- ensuring that the school program is appropriate for each child.

Ongoing Identification

It must be stressed that identification of learning needs is not an isolated phenomenon that occurs at a single time in a child's school career. Furthermore, no single identification, assessment, or instructional system has been devised that can anticipate all of the learning situations that occur in the classroom. Identification should be an integral part of any teaching/testing/teaching cycle, particularly as some children's special learning needs are not readily noticed in the beginning years because the nature of these needs is concealed until school tasks become more complex.

Sources of Information About the Child

Informal Assessment in the Classroom

The teacher has a crucial role in the identification and assessment of a child's learning characteristics both at the time of initial entry to the school and in later years. He/she has the opportunity to observe the child on a daily basis and to assess patterns of academic performance and social behaviour. Therefore, the teacher's first and most important source of information about children is the children themselves.

The teacher carefully observes each child to determine individual patterns of performance, and asks him-/herself questions such as the following:

- Despite conventional methodology and continual effort on my part, does the pupil still have difficulty understanding, integrating, or performing a task?
- What type of lesson format tends to produce the most successful responses?
- Does the pupil overly favour a specific modality to the exclusion of the others?
- How does he/she react to changes in class routine or to varying amounts of teacher guidance for academic work?

- Does he/she require that some tasks be broken down into small sequential steps, while being able to master other tasks quickly and easily with little teacher direction?
- Are there significant discrepancies in the pupil's patterns of performance?

An almost inexhaustible variety of significant discrepancies in a child's development may be found. For example, a child may exhibit significant discrepancies between:

- chronological age and physical development;
- chronological age and language development;
- physical development and gross and fine motor co-ordination;
- physical maturity and social maturity;
- understanding what he/she hears and expressing what is on his/her mind;
- understanding what he/she hears and understanding what he/she sees;
- understanding a discussion when he/she is the speaker and understanding a discussion when he/she is not the speaker;
- understanding what he/she does (primary experience) and understanding what he/she hears or sees (mediated experience);
- telling how to do something and showing how to do something;
- speaking what is on his/her mind and writing what is on his/her mind;
- using correct oral syntax and using correct written syntax;
- understanding stories and reading stories;
- reading orally and reading silently;
- performing pencil-and-paper tasks (fine motor) and performing gesture or activity tasks (gross motor);
- interpreting print material and interpreting pictures, diagrams, charts, or maps;
- recognizing and applying word-analysis skills for interpreting print (reading) and recalling and applying word-analysis skills for the reproduction of print (spelling);
- spelling orally and spelling in written form;
- integrating in-school experiences, ideas, and skills and integrating out-of-school experiences, ideas, and skills;
- attending to lessons and attending to personal interests;
- remembering mechanical arithmetic skills and using mechanical arithmetic skills in solving problems;
- using mathematical concepts in daily life and applying mathematical concepts in the assigned curriculum.

The pupil with a disability in integrating information fails to make one or more of the connections among the reception, processing, and expression of language. This failure to make connections leads to significant discrepancies in classroom performance within the language arts area. For example, if the teacher asks the pupil to draw a picture inspired by a class field trip and the pupil follows instructions and produces a good piece of artwork, the following connections are intact:

personal experience —→ listening —→ doing

If the teacher asks the pupil to describe the trip and the child understands what is required but has difficulty talking about the experience, the following connection has not been made:

listening —→ speaking

The child might have failed to make this communication connection because he/she has trouble articulating sounds, recalling appropriate vocabulary, or organizing and using sentences.

Two other children may both be able to understand a story that is read to them (listening —→ thinking), but for different reasons be unable to understand a story that they read themselves. One child understands what he/she hears, but not what he/she reads (i.e., the connection between reading and thinking is not made). The difficulties occur when the child has to interpret print material: see detail, recognize the main idea, make inferences, or draw conclusions. The other child understands what is read aloud to him/her, but cannot efficiently use his/her understanding of content because of difficulties with the print material: remembering sight vocabulary and using word-recognition skills (the visual aspects of the connection between reading and thinking are impaired).

Still another child may read efficiently but have difficulty writing about what he/she has read (the problem lies in the reading —→ writing connection). The type of writing difficulty the child has may be related to handwriting and/or spelling skills, thought formulation, or syntax.

Children with specific learning disabilities will reveal patterns of performance that differ from those of their peers. They will exhibit more extreme variations when they perform different tasks in different settings. Possible reasons for these significant discrepancies can be suggested by support staff if a clinical and/or psychological assessment is done.

Parent-Teacher Dialogue

A second information source is the parent. Learning starts at home: parents are observers and intuitive teachers of their children from their earliest stages of development. Parents can be partners in programming; they have much to offer the teacher if he/she enlists their aid in attempting to discover their child's patterns

of interest and performance. Parents can not only describe developmental milestones and the place of the pupil in the family constellation, but they can also supply valuable information regarding their child's favoured ways of learning and reaction to various styles of parental teaching. With this information, the teacher can plan more effectively for the pupil.

Topics for the teacher and parent to discuss might include the following kinds of verbal and non-verbal experiences:

- opportunities and degree of freedom to explore the environment (play, visits, etc.);
- language activities in the home (family discussions, table talk);
- the child's activities in the community (clubs, hobby groups, recreation);
- family and individual interests or activities (e.g., arts and crafts, books and magazines, television, outdoor sports, and indoor games: alone, or with siblings, parents, or the neighbours' children);
- responsibilities assumed by the child in the home (making beds, setting the table, helping with meal preparation, removing garbage);
- the ways the child approaches tasks and deals with consequences;
- the type of encouragement used;
- his/her response to change of routine;
- the ways in which the child seems to learn about things best, whether they are games, rules, or social behaviour;
- marked discrepancies in the child's knowledge and skills, in language and non-language expression, or in-school and out-of-school learning.

In addition to this general information, there may be a need for more specific details. For example, if the teacher observes that the pupil is having difficulty with the beginning stages of reading, he/she will be interested in determining parental approaches to reading and may initiate a discussion with the parents about reading activities in the home. In this way the teacher can find out what types of books the child reads and can ask the parents to make a list of the child's favourite stories so that these may be brought into the classroom. The teacher can also establish the age at which reading to the child began, whether the child or parent selects the reading material, and the frequency and extent of reading activity. When the teacher discovers at what time of day home reading occurs, he/she may modify reading routines at school to match classroom mood with the mood the child is used to at home: the bedtime reader may adapt best to reading during a quiet classroom interval; the early morning reader may appreciate reading activity at the beginning of morning or afternoon sessions when he/she is fresh.

The teacher can ask the parents questions about their teaching styles, such as the following:

- Does your child sit on your knee with the book in front of him/her or does he/she sit away from you? (exposure as opposed to non-exposure to print)
- Do you repeat favourite parts, leaving out final words or phrases so your child can finish the sentences? (auditory closure)
- Do you play word games while you are reading, such as asking your child to fill in rhymes, medial words, phrases, or clauses? (auditory memory)
- Do you ask him/her to *read* the title? (visual word recognition)
- Do you discuss the picture(s) before, during, or after reading the story? (directed thinking activity using visual cues) If the parents deal with language first, leaving non-verbal support until later, the teacher may need to give the child instruction in picture interpretation and finding visual detail before language activities.
- Do you finger-slide as you read aloud? (voice-finger match, directionality) If pointing has not been done, the teacher knows he/she may need to reinforce left-right progression.
- Do you select a repeated word for the child to look at and find elsewhere on the page? (voice-print match —→ visual discrimination: find and read)
- Do you encourage your child to guess what is in the book? Does your child take well-thought-out risks?
- When your child asks a question about the story, do you encourage him/her to give an opinion first? (creative problem-solving)
- How do you respond when your child makes a statement about what is being read? Do you say things like "What made you think about that?" or "How do you know about that? That's an interesting idea." (eliciting associations and elaboration)



- Is your child aware of the differences among various commercial or highway signs? (visual literacy in the community, verbal and non-verbal visual discrimination, association of symbols with meaning)

The results of this type of dialogue will establish the extent of pupils' knowledge of their world, their verbal and non-verbal experiences and skills, their attitudes to tasks, and the ways in which they have acquired them with their parents' assistance. Aided by this information, the teacher is able to dovetail each pupil's needs, interests, knowledge, and skills with the various aspects of the school curriculum.

If the teacher should find that the pupil, for whatever reason, has not had the prerequisite experiences that underlie the development of basic skills, he/she will know that the pupil will need expanded experiences at school and that teaching must begin with the most elementary steps within the curriculum: for example, with reading to the pupil and talking about the pictures and the story.

Formal Assessment

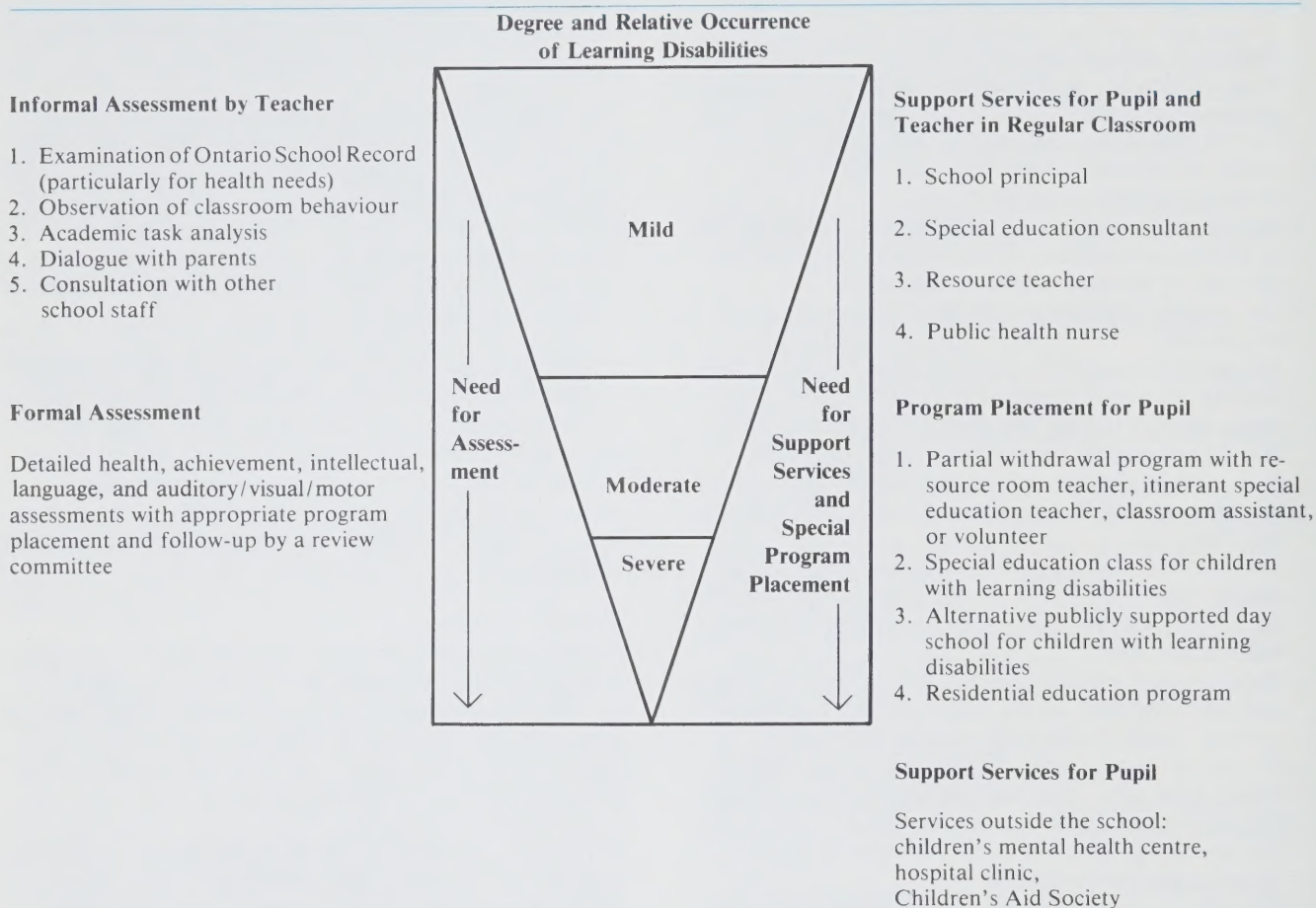
If learning problems are obviously moderate to severe, a third source of information is needed about the pupil's performance. The teacher should then consider referring the child, after written parental permission has been obtained, for more formal assessment by the school's student services personnel.

A diagnostic evaluation of the individual pupil should include the following: a detailed health examination (including hearing, vision, physical, and, where necessary, neurological assessment); formal academic achievement testing, both criterion- and norm-referenced; psychological assessment of the child's intellectual functioning; language assessment; examination of the social/family history; and assessment of the development and integration of auditory, visual, and motor functioning. The results of the evaluation should be shared with the parents, teacher, and, where appropriate, other school staff. Pupils should be sensitively counselled to assist them in understanding their learning needs and abilities.

Profiles of pupils with specific learning disabilities will show varying degrees of "scatter", that is, significant discrepancies among various performance levels on different sections of the testing. The formal assessment should elucidate the extent and range of learning strengths and weaknesses so that the teacher has sufficient information on which to build an educational program. The teacher needs to be able to translate the information provided into meaningful instructional practice. This can only happen if close co-operation exists between teaching and support staffs.

The extent of a pupil's learning needs will dictate the amount of assessment and support services required. The following model demonstrates this relationship.

An Assessment/Support Services/Placement Model for Pupils With Learning Disabilities



The Teacher's Central Role

The teacher is the continuous element in the effective identification, assessment, and instruction of pupils with learning disabilities. His/her continuing contact with the pupil, observation of classroom behaviour, and careful analysis of educational needs are of more immediate importance to the pupil's efficient learning than more formal assessment. If the severity of the learning disability indicates that formal assessment is required, the teacher becomes the central member of an assessment team. Assessment should be a co-operative enterprise with the teacher, parents, and support services co-ordinating their efforts to determine the most appropriate learning environment for the child. The pupil should be nurtured and supported by the joint activity of the teacher, parents, and support services both in the school and in the community.



Introduction

Many approaches have been formulated to assist pupils who have learning disabilities. These have been developed from sensory-motor/perceptual-motor development, perception and memory, language/cognition, and other developmental perspectives.

Claims have been made, for example, that perceptual-motor exercises improve reading ability, but the link between physical exercise and reading performance has not been clearly established. Undeniably, however, perceptual-motor training for some pupils may be appropriate in and of itself. Teachers should consult the support documents to *The Formative Years* entitled *Movement* (Toronto: Ministry of Education, Ontario, 1976) and *Fitness* (Toronto: Ministry of Education, Ontario, 1978) for suggested programming in physical activity.

Teachers should acquaint themselves with the basic tenets of the perspectives noted above (see the bibliography). It is most important, however, that teaching methods be tailored to suit the specific needs of individual pupils. Meeting specific individual needs involves an ongoing process of teaching, testing, modifying, and implementing effective methodology on a pragmatic basis. This cannot be accomplished without a clear understanding of cognitive and affective development.

Encouraging Cognitive Development

Cognitive development refers to the growth in ability of a human being to acquire, interpret, organize, store, retrieve, and employ concepts or knowledge. The learning of concepts is obviously important, since it is related to all curriculum areas in school as well as to learning outside of school. This document assumes that all people attempt to make sense out of their environment and that they do so in sequential stages of intellectual development. These stages are outlined in *The Complexities of Childhood* (Toronto: Ministry of Education, Ontario, 1977-78), a chart prepared by the Ministry of Education. It states that "maturation cannot be accelerated but learning can be enhanced within any stage. Each child's pattern of development is unique."

Because many pupils with learning disabilities have gaps of varying severity in their cognitive development, they do not learn concepts incidentally. They need to be taught how to think, plan, classify, solve problems, understand abstract language, and transfer learning to new situations. All of these depend on basic learning skills, particularly those required for arithmetic, in which logical thinking and problem-solving are involved, and for language arts, in which an understanding of the meanings of words and ideas is essential.

The following are some techniques that can be used to encourage cognitive growth:

- Engage the pupils in direct learning as often as possible. Manipulating materials and exploring the environment lessen the information-processing load that may prove a stumbling block for many pupils with learning disabilities.
- Move systematically from the concrete (real objects such as apples) → the semi-concrete (pictures of apples) → the semi-abstract (circles representing apples) → the abstract (the word "apples").
- Make the learning activity relevant to the pupil.
- Reduce the complexity of learning tasks so that pupils can see relationships. The level of complexity can then be gradually raised through related activities and questioning so that pupils have experience in classifying, associating, generalizing, and extrapolating.

Teacher modelling is a key component in the development of cognitive skills. Modelling assists the pupils in understanding what is required to complete complicated tasks. The teacher directs the thinking process so that pupils may identify the sequential steps in solving a math problem or in carrying out a scientific experiment.

Particularly in reading comprehension, questioning procedures in directed reading and thinking activities enhance cognitive development. To ensure successful classroom questioning, it is suggested that the teacher:

- ensure that the pupils are attentive before asking the first question;
- not ask questions that require simply a "yes" or "no" response. Such questions fail to encourage higher thought processes. They also lead to guessing and do little to develop expressive language;
- allow sufficient time for pupils to think about the question. A quiet period of thinking should occur after any question, whether it calls for a short factual answer or an involved solution, to avoid premature responses;
- reword or restate questions when pupils fail to respond or answer incorrectly. Such responses could be due to a poorly worded question;
- include questions of varying levels of difficulty, by proceeding systematically from the concrete to the abstract and from the known to the unknown;
- get maximum mileage from his/her question. Other students can be asked whether they agree with the first response, whether it is correct or not. Pupils can thus be involved in evaluating responses;
- look for any correct information in an answer, no matter how small. Positive reinforcement will encourage the pupil to continue participating.

For other approaches to helping pupils organize and understand concepts, see the sections on pages 11 to 15. The section on “memory-development techniques” (pages 15 to 17) will assist pupils in organizing information and retaining it for future use. Of critical importance for developing relevant analytical thinking is the self-correction process outlined on page 13.

Education in the Primary and Junior Divisions (Toronto: Ministry of Education, Ontario, 1975) is a source of abundant material on encouraging cognitive development. For further assistance in designing cognitive activities for the classroom, refer to Ellen Regan et al., *Stimulating Cognitive Growth* (Toronto: OISE, 1978) and Carl Bereiter and Valerie Anderson, *Thinking Games*, Book 1 (for ages five to nine) and Book 2 (for age nine and older) (Toronto: OISE, 1975).



Needs of Pupils With Preferred Learning Modalities (Visual or Auditory Preferences)

All pupils with learning disabilities require multimodal instructional methods linked with sequential systems of presentation. Many learning disabled pupils exhibit preferred learning styles, with a consequent dependence on a specific modality (e.g., auditory because of a visual weakness). The need for methodological specialization increases with the severity of the learning disability.

Two major “types” of preferred learning styles are visual and auditory.

1. Visual preference

The pupil who shows a visual preference understands visual presentations and spatial relationships.

Such a pupil needs:

- tactile-kinesthetic support;
- training in auditory discrimination, memory, and symbolization.

The visual learner enjoys working with pictures, charts, graphs, maps, puzzles, games, and colour-coding systems. He/she requires visual presentations to compensate for a weakness in the auditory processes involved in learning (auditory discrimination, memory, and symbolization).

2. Auditory preference

The pupil who shows an auditory preference is strong in the areas of:

- listening and speaking;
- understanding and retaining oral vocabulary.

Such a pupil needs:

- tactile-kinesthetic support;
- training in visual discrimination, memory, and symbolization.

The auditory learner enjoys talking and listening to other people or listening to audiotapes and records. He/she requires oral explanations to compensate for a weakness in the visual processes involved in learning (visual discrimination, memory, and symbolization).

Where there is a need to improve both auditory and visual processing, a tactile-kinesthetic approach is required. The pupil needs to touch, feel, and/or move rhythmically to support the visual and auditory processes required to learn.

For both the auditory and visual learner, testing of knowledge should involve oral, written, demonstration, true/false, and multiple-choice methods, in order to provide as many opportunities for success as possible. For example, when evaluating a science unit, the teacher should allow pupils to explain the subject content, draw pictures or diagrams, describe the subject content in writing, show others what they have learned, and/or write true/false and multiple-choice tests.

The following sections suggest support strategies for learners with visual and auditory preferences.

General Support Strategies for the Learner With a Visual Preference

Teachers of learners who have a visual preference should consider the following suggestions:

- Tailor auditory activities to the pupil's experiences, interests, and needs.
- Restrict distracting environmental noises.
- Alternate auditory and non-auditory activities to prevent fatigue.
- Make maximum use of visual clues while speaking directly to the pupil.
- Present a good model of various language patterns for the pupil.
- Use somewhat exaggerated patterns of inflection for emphasis when necessary.
- Use gestures and visual demonstrations while giving oral instruction.
- Keep auditory activities in line with the pupil's attention tolerance and then gradually increase their length.
- Keep explanations and directions *concise* and relevant to the task.
- Present experiences and appropriate vocabulary simultaneously to assist associative memory.
- Connect the sound of a letter with the printed symbol.
- Make use of curriculum content wherever possible to develop and expand language concepts, awareness of similarities and differences between sounds, and auditory memory for sounds and vocabulary.
- Make time for spontaneous conversation during activities in the classroom and on the playground.
- Have the pupil verbalize what he/she is doing or seeing while he/she is cooking, fixing equipment, or looking at a filmstrip, pictures, or the actions of other pupils.
- Provide sufficient time for the pupil to formulate thoughts and plan oral responses.

- Encourage peer talk by:
 - a) having one pupil give directions and another follow them *exactly*; then having them reverse roles;
 - b) having one pupil describe an object orally. The other pupils then ask questions to determine what the object is.
- Provide oral sentence-building activities. Control variables by making minimal closure demands and then increasing them.
- Let the pupil tape his/her speech and listen to it. Then take him/her through the self-correction process (see page 13).

Specific Auditory Support Strategies

1. Sound-symbol matches

Start with single consonants. Proceed to consonant blends and digraphs.

2. Blending and segmenting (auditory discrimination)
Have pupils move in ascending levels of difficulty from working with (a) compound words of two syllables, to (b) two-syllable non-compounds, to (c) multisyllabic words, to (d) one-syllable words.

a) whole postman

 parts post - man

 whole postman

b) mother

 moth - er

 mother

c) helpfulness

 help - ful - ness

 helpfulness

d) man

 m a n

 m a n

 man

3. Singing syllables (rhythmic syllabication)

Note: In singing, syllables are divided after vowels:

- a) Oh Cá ná dá
- b) She'll be có ming 'round the moun tain
when she cómes, when she cómes

4. The stethoscope game (auditory discrimination)

The pupil puts a stethoscope to his/her ears and says sets of words into the mouthpiece so that he/she receives intensified feedback of differences in sounds in words such as “him” and “hem”, “sat” and “set”, “pen” and “pin”.

5. Intensifying final letter sounds

park, part

6. Spelling a word orally while looking at it and writing it (auditory memory rehearsal)

See page 16.

7. Rhyming words

try, cry; fly, buy.

General Support Strategies for the Learner With an Auditory Preference

Teachers of learners who have an auditory preference should consider the following suggestions:

- Tailor visual activities to the pupil's experiences, interests, and needs. For example, ask the pupil to bring photographs from home. Have him/her describe what is in the photos (recognition of the main idea) and what happened before and after each photograph was taken (visualization).
- Ensure that the pupil's work area contains only those items required for the task at hand (reduction of distractions).
- On worksheets put a heavy line around sections to help the pupil attend to one item at a time.
- Give the pupil only one worksheet, instead of many at once.
- Make sure that the pupil's attention is properly focused before the lesson starts.
- Keep visual activities in line with the pupil's attention tolerance and then gradually increase the length of time of each activity.
- Alternate visual and non-visual activities to prevent fatigue.
- Make maximum use of auditory clues while the pupil is attending to visual material.
- Provide sufficient time between a visual presentation and an oral response for pupil interpretation, thought formulation, and planning of an answer or comment.
- Give oral explanations to the pupil so that he/she adjusts easily to new situations. In activity centres a pupil may use a teacher-prepared audiotape and ear-phones to assist his/her organization of an activity.
- Teach letter-sound combinations followed by the printed symbols.
- Reduce sight vocabulary difficulties by assisting the pupil in the efficient use of context strategies, initial consonant or syllable identification, and oral sound blending and segmenting within the pupil's language experience.
- Provide time for uninterrupted, sustained silent reading on a daily basis. Start with a short period and slowly increase the time allotted.
- Teach the pupil to “talk through” tasks, that is, allow him/her to verbalize as he/she reads or does math, science, and map assignments.
- For pupils with directionality problems, use visual clue markers: for example, a green (for “go”) dot on the top left of the desk, and a red (for “stop”) dot on the top right of the desk; a black paper strip used either horizontally or vertically on the page as a place marker for reading; arrows on worksheets.
- Give instructions as often as possible that use appropriate directional vocabulary (left, right, top, bottom, over, under, behind, beside, before, after, etc.) to match the pupil's simultaneous physical activity.



- For those pupils who have writing problems, the following strategies are suggested:
 - a) Have pupils work from large figures on large sheets of paper to smaller figures on worksheets.
 - b) Supply pupils with felt pens and finger holds.
 - c) Provide pupils with a good, consistent model.
 - d) Use materials that give pupils strong visual and, where possible, kinesthetic feedback (e.g., finger paint, large marking pencils).
 - e) Provide relaxation exercises such as shaking hands and arms or opening and closing the fist.
 - f) Make sure at the outset that any copying assignment can be read and is understood.
 - g) Limit the amount of copying required and allow extra time for it.
 - h) Avoid combining copying exercises with another activity that the pupil finds difficult.
 - i) Allow the use of a primary typewriter.
- For further suggestions in this area see the section on teaching handwriting on pages 17 to 18.
- Encourage the pupil to write down his/her speech and read it. Then take him/her through the self-correction process.

Self-Correction Process

The self-correction process is a generic strategy that can be used in all subject areas for all pupils. It consists of the following steps:

- a) The pupil listens to him-/herself speaking or reading aloud in order to *identify* an error. If the pupil can detect an error, he/she underlines it. If he/she can't, the teacher identifies the error.
- b) The pupil *pinpoints* the precise location and type of each error, one at a time (for example, "berd" for "bird" in spelling; or a carrying error as opposed to a faulty multiplication fact in arithmetic). If he/she cannot do this, the teacher pinpoints the error.
- c) The teacher and/or pupil *provide alternatives* ("burd", "berd", "bird").
- d) The teacher and pupil together *decide on the correct form*.

In using the self-correction process, the pupil works towards independence. As he/she becomes more adept at correcting him-/herself, the teacher is able to withdraw support gradually.

Specific Visual Support Strategies

The examples given are only a few of those possible. Besides being fun, these strategies help children with their spelling. After the initial instruction, the pupils should be encouraged to develop their own examples.

Note: These strategies are more extensive than are the auditory or tactile-kinesthetic strategies because the nature of the spelling task requires more visual support. Pupils tend to be more able to match sound with symbol and to spell phonetically; irregular spellings must be learned visually.

1. Patterns in words (visual memory)

i) Adding a line

- a) oooo good
- b) lool look tool
- c) lolol total

ii) Pattern repetition

- a) radar
- b) grammar
- c) murmur
- d) noon
- e) onion
- f) mimic

2. Add a line (visual discrimination)

- | | |
|-------------|-------------------|
| a) lake | c) coal |
| <u>take</u> | coat <u> </u> |
| b) woke | d) commerce |
| wake | comm <u>en</u> ce |

3. Similar word groups (visual discrimination and sequencing)

- | | |
|----------|-----------|
| a) diary | e) expect |
| dairy | except |
| b) was | f) left |
| saw | felt |
| c) quiet | g) tea |
| quite | ate |
| d) there | eat |
| three | |

4. Disappearing letters (visual memory)

help - - l p
-elp - - - p
 - - - -

5. Colour coding (visual discrimination)

museum
cotton
Toronto
Use different colours for different letters:
e.g., m = red,
u = yellow, etc.

6. The camera technique (visual imagery)

Pupils note patterns, and the number and position of letters in a word, moving from parts of the word to the whole word. Then they take a “picture” of it with their mental cameras. Pupils in the Primary grades can make a “real” camera out of a small cereal box and cardboard tubing. Follow-up testing to ascertain if pupils have taken a correct picture of a word may be done as follows: pupils may spell the word orally, circle the target word from a group of words, print or write the target word, rearrange jumbled letters to make the target word, or point out the letters of the target word in sequence from an alphabet line.

7. Word build-ups (structural analysis)

call	play
calls	plays
called	played
calling	playing
caller	player
recall	playful
	replay
	playmate
	playground
	playtime

8. Letter build-ups (visual discrimination)

d o u b t
d o u b l e

9. Pattern closure (visual memory)

r a d a r	- a d a -
r - d - r	r - - - r

10. Where’s the difference? (visual discrimination)

a) bay	c) quilt
day	guilt
b) moon	d) statues
noon	statutes

11. Spelling games such as Hangman, Spill and Spell, or Scrabble

Many of these techniques may also be used to assist a pupil in developing word-recognition skills and in retaining sight vocabulary.



Teachers should consider using the following suggested strategies, which not only take advantage of tactile-kinesthetic strengths, but also develop them:

- Present manipulative experiences whenever possible.
- Supply concrete objects for counting, sequencing, establishing patterns, seeing similarities and differences, categorizing, etc.
- Use letters and numbers made of felt, sandpaper, or three-dimensional shapes.
- Supply students with tactile materials for tracing and writing activities to provide them with sensory reinforcement.
- Use action songs and games.
- Clap or tap out numbers or syllables.
- Have children form letter shapes with their bodies.
- Use letters printed on beads. The pupils slide the beads together while blending sounds.
- Have pupils walk out patterns of words or numbers on a number line.
- Have students put objects on a number line on the floor.
- Use movement exploration activities to teach such prepositional concepts as “over”, “beside”, and “outside”. As well, addition and subtraction concepts can be taught on playground equipment.

1. Body words

Pupils make letter shapes with their bodies, e.g., five pupils form the word “jump”:

j	u	m		p
		/	\	
1	2	3	4	5

Using a mirror, pupils observe their mouths when forming letters:

- | | | |
|---|----------------------|--|
| <p>a)</p> <p style="text-align: center;">b
↑</p> <p>(lips closed,
then mouth open)</p> | <p>as opposed to</p> | <p style="text-align: center;">d
↑</p> <p>(mouth open)</p> |
| <p>b)</p> <p style="text-align: center;">m
↑</p> <p>(mouth closed)</p> | <p>as opposed to</p> | <p style="text-align: center;">n
↑</p> <p>(mouth open)</p> |
| <p>c)</p> <p style="text-align: center;">f
↑</p> <p>(unvoiced
consonant)</p> <p>(Pupils feel the air
in front of
their mouths
as they
say the sound.)</p> | <p>as opposed to</p> | <p style="text-align: center;">v
↑</p> <p>(voiced
consonant)</p> <p>(Pupils feel their
throats vibrate
as they say
the sound.)</p> |

- a) Pupils hold the palms of their hands on their chins while segmenting.
- b) Pupils tap syllables on their arms.
- c) Pupils clap out syllables.

Pupils trace words in a variety of media: wet sand, clay, wire screening, corrugated paper, the palm of the hand, air, sponges, metal, or plasticine.

Pupils use letter shapes made of wood, felt, sponge, or carpet underpadding to construct words.

Memory plays a vital role in every aspect of learning. However, pupils with learning disabilities often have problems recalling what things look or sound like. Three stages of memory must be operating in order for pupils to learn a task efficiently: reception, storage, and retrieval or recall. The learning disabled pupil may have difficulty with any of these three stages. In addition, there are four basic kinds of memory that may be affected: visual memory, involving the receiving, storing, and retrieving of visual images; auditory memory, involving the same processes with regard to sound and spoken language; kinesthetic memory for muscular movement; and motor memory for the performance of gross and fine motor tasks. All four kinds of memory form a bridge between incoming and outgoing information. They connect experiences so that a vast number of incoming stimuli are changed, absorbed, unified, and stored, ready for translation into meaningful action in the present or future.

- intensity of attention,
- meaningfulness of material,
- degree of interest,
- amount of overlearning involved.

The following is a list of memory strategies that can be incorporated into any teaching-learning situation so that pupils will have many alternative opportunities to receive, store, and retrieve information effectively.

1. *Locus of control.* In this strategy the teacher invites the pupil to suggest how he/she can best learn. The pupil knows that he/she is definitely in charge of his/her own learning and can activate strategies to learn how to learn.

2. *Intensity of attention.* The pupil is encouraged to attend to relevant cues, assisted by multi-sensory methods or by exaggeration of the key element to be learned (e.g., the final “t” in “helmet”). Exaggerated pronunciation is gradually faded out and written highlights are removed when no longer necessary.

3. *Meaningfulness.* New information is presented in the context of previous experience. However, the teacher must provide the links; otherwise the pupil may make a transfer that is inappropriate or irrelevant. For example, in subtracting 4 from 6, the pupil learns to take the small number away from the big one. However, the same principle cannot be applied to a question like 34 minus 18, where the 4 is smaller than the 8.

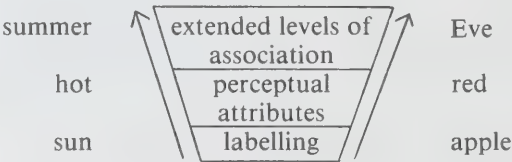
4. *Interest.* The pupil must be made aware of the relevance of and the need for learning a task.

5. *Chunking or grouping.* The pupil takes chunks of information he/she knows and arranges them to incorporate new material. In this way dictionary skills may be developed from the pupil’s familiarity with the alphabet. The pupil’s knowledge of his/her body may be used as a springboard for an analysis of similarities and differences between the human species and members of the animal kingdom.

6. *Auditory rehearsal.* This technique reinforces inner verbalization and moves from simple to complex sequences. The pupil engages in a dialogue with him-/herself by “thinking out loud” or by repeating to him-/herself information just seen or heard. He/she can add finger rehearsal to the process by touching his/her fingers while verbalizing the *three* directions or the *four* parts of an answer, for example.

7. *Visual imagery rehearsal.* The pupil moves from picturing a single event or item to picturing a sequence of events or a body of information.

8. *Association or classification.* Pupils group like objects or ideas, e.g., apple – fruit. They tend to move from labelling the object to finding its perceptual attributes to developing extended levels of association. For example, an apple can suggest the following conceptual progression: round, red, eat, juicy; applesauce, pie, candied, bobbing; tree, cross-pollination, grafting; doctor, William Tell, Snow White, Adam and Eve.



9. *Mnemonic devices.* These are visual or auditory linking methods to assist memory. The following are examples of mnemonic devices:

- The visual presentation of a word represents its meaning:

e.g.,  ountain,  nake.

- To help in the retrieval of a name, the pupil selects a positive trait of the person to associate with his/her name: e.g., tall Tony, smart Sam.
- Funny sentences may be made up with the first letter of each word matching the first letter of items in a sequence: e.g., “Man Very Early Made Jars Stand Up Nearly Perpendicular” can be used to represent the order of the planets from the sun outward.
- Rhymes such as “30 days hath September . . .” are powerful and lasting means of remembering details.
- Acronyms may be formed from the first letters of words to be learned: e.g., W H O stands for the World Health Organization, N E W S for the major compass points.
- Orientation aids: e.g., “When you face north, left is west” (sounds in the two words are similar), or “When you face forward, starboard is on the right” (because it has more r’s than port).

Pupils can create other mnemonic devices for their own particular needs with teacher help.

10. *Practice.* Continual review and frequent reinforcement result in overlearning, which leads to automatic recall.

11. *Sight word steps.* In teaching a sight word, teachers may use the following procedure, which involves many memory strategies:

Step 1. Have the pupil see and say the word as in the visual imagery and auditory rehearsal techniques.

Step 2. Establish the function and scope of the word (through the techniques of association, meaningfulness, and transfer of knowledge to other members of the word family).

Step 3. Increase pupils’ awareness of the word’s configuration by having pupils visualize the whole word, note letter parts making up the whole word, and visualize their sequence.

Step 4. Have pupils trace the word with a finger and associate each letter symbol with a sound. (This is a multimodal approach using motor, tactile, associative, visual, and auditory memory functions.)

Step 5. Have pupils picture the word, write it, and say it. (This is a multimodal approach using revisualization, visual-motor, and auditory reinforcement.)

Two Sample Lessons Using a Multimodal Sequence of Presentation

Sample Lesson 1

Subject: Language Arts

Skill: Handwriting

Topic: The letter “g”

Method:

Step 1. The name of the letter is introduced.

Step 2. Its position in the alphabet is established.

Step 3. The following aspects of the letter are presented:

a) visually similar letters: g q

g p

g a

b) the printed form “g” and written form “g”

c) known words that contain this letter

d) the sound of the symbol “g”

Step 4. The pupil listens and observes while the teacher describes and performs the movements involved in writing the letter. The teacher:

a) writes the letter in progression from parts to whole;

b) colour codes the parts;

c) discusses the spatial relationships of the parts.

Step 5. Speaking —→ writing

The pupil describes what he/she is doing as he/she performs the movements with various utensils, such as a finger, a crayon, chalk, a stylus, and a pencil or pen.

- Step 6. *Feeling and looking* —→ *writing*
 The pupil writes the letter in the following progression:
- a) in the air
 - b) on sandpaper
 - c) on the chalkboard
 - d) on unlined paper
 - e) in colour-coded spaces, e.g.:

(blue)		light blue = sky, for tall letters
(green)		light green = grass, for one-spaced letters
(brown)		light brown = earth, for tailed letters

- f) on colour-coded lined paper (red-blue-blue)
- g) on traditional lined paper

Step 7. *Writing* —→ *writing*
 The pupil proceeds from:

- a) pattern scribbling
- b) to tracing
- c) to copying
- d) to reproducing the letter without the model.

Sample Lesson 2
Subject: Language Arts
Skill: Spelling
Topic: The word “limit”
Method:

- Step 1. Teacher and pupils discuss the word’s meaning and associations: e.g., boundary, speed limit, the sky’s the limit.
- Step 2. Pupils say the word aloud.
- Step 3. Pupils read:
- a) the whole word
 - b) the word in segments: lim – it (Syllables should be colour-coded.)
- Step 4. Pupils blend and segment the word (i.e., do a phonetic analysis of the sound-symbol match) by:
- a) noting the sequence of the five letters and their five associated sounds;
 - b) noting that the word has two syllables: lim it;
 - c) looking into a mirror for visual support while saying the syllables;
 - d) tapping the syllables on their arms;
 - e) noting their mouth and chin positions while saying the word.
- Step 5. Pupils practise visual and auditory closure.
- Visual:* Pupils look at the following and supply the missing letters:
- l - m - t

- i m i -

l i - i t
- Auditory:* Pupils fill in the missing letter sound as the teacher says “-imit”, “limi-”, and “li-it”.
- Step 6. Pupils use a mental camera to “take a picture” of the word in their minds.
- Step 7. Pupils select the correct form from alternative forms: limmit, limet, limitt, limit.
- Step 8. Pupils write the word as quickly as possible (automatic speeded spelling).
- Step 9. Pupils spell the word orally while writing it (eye-voice-print match).
- Step 10. Pupils extend “limit” (do structural analysis): limits, limited, limiting, unlimited, limitation.
- Step 11. Pupils use the word in written activities, e.g., in answers to questions.

Approaches to Reading for the Pupil With Learning Disabilities

Most pupils with learning disabilities are in a learning-to-read as opposed to a reading-to-learn situation. *Becoming a Reader* (Toronto: Ministry of Education, Ontario, 1976) and *An Approach to Reading* (Toronto: Ministry of Education, Ontario, 1977) supply models for reading instruction. Within whatever reading model is used, the teacher must recognize and plan for the pupil's developmental and reading needs, the amount and relevance of curriculum content, the rate and style of curriculum presentation, and the tailoring of teaching style to the pupil's strengths and needs.

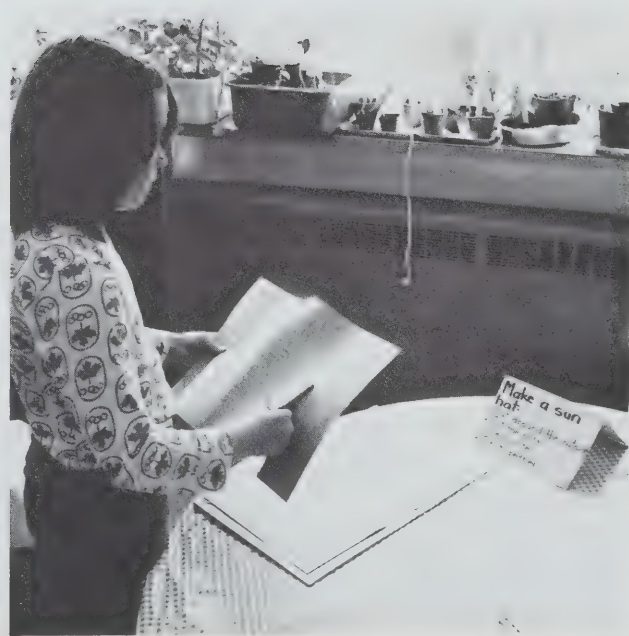
The teacher should supplement the reading model adopted to include any aspects that are necessary for individual instruction. A reliance on any one method of teaching reading may restrict opportunities to learn for the pupil with learning disabilities.

Approaches to Writing for the Pupil With Learning Disabilities

Written work is commonly the most difficult challenge for pupils with learning disabilities. They must cope with the mechanical skills of handwriting and spelling, while at the same time attempting to convey meaningful ideas by using appropriate vocabulary arranged in acceptable syntactical patterns.

A pupil may have difficulties with any or all of the above tasks. The following are suggested approaches to writing for the pupil with learning disabilities:

1. Use primary experiences such as field trips as a starting point. Discuss these experiences before asking for written work.
2. Have the pupil develop a theme orally, discuss it with you, tape his/her story, play it back, and then make oral corrections. Have the pupil then write the story from his/her own corrected tape and use the self-correction process (see page 13) to correct it.
3. When having pupils copy written work, have them proceed from near-point transcription of materials on their desks to far-point copying from the chalkboard.
4. Be sensitive to the amount of written work expected. Start with a simple sentence or two and gradually increase expectations regarding length.
5. Do not be overly critical of the quality of the work produced. Accept initial efforts without criticism and then tactfully suggest improvements via the self-correction process.
6. Watch for any discrepancies between various components of written language, e.g., clear expression but poor spelling, garbled expression but good penmanship.
7. Be alert to the pupil's possible need for sequentially developed instruction in writing skills.



Samples of Written Expression by Pupils With Learning Disabilities

The writing samples that follow are typical productions of pupils with learning disabilities. Teachers should examine these samples carefully as an aid to the recognition of similar problems in their own classes.

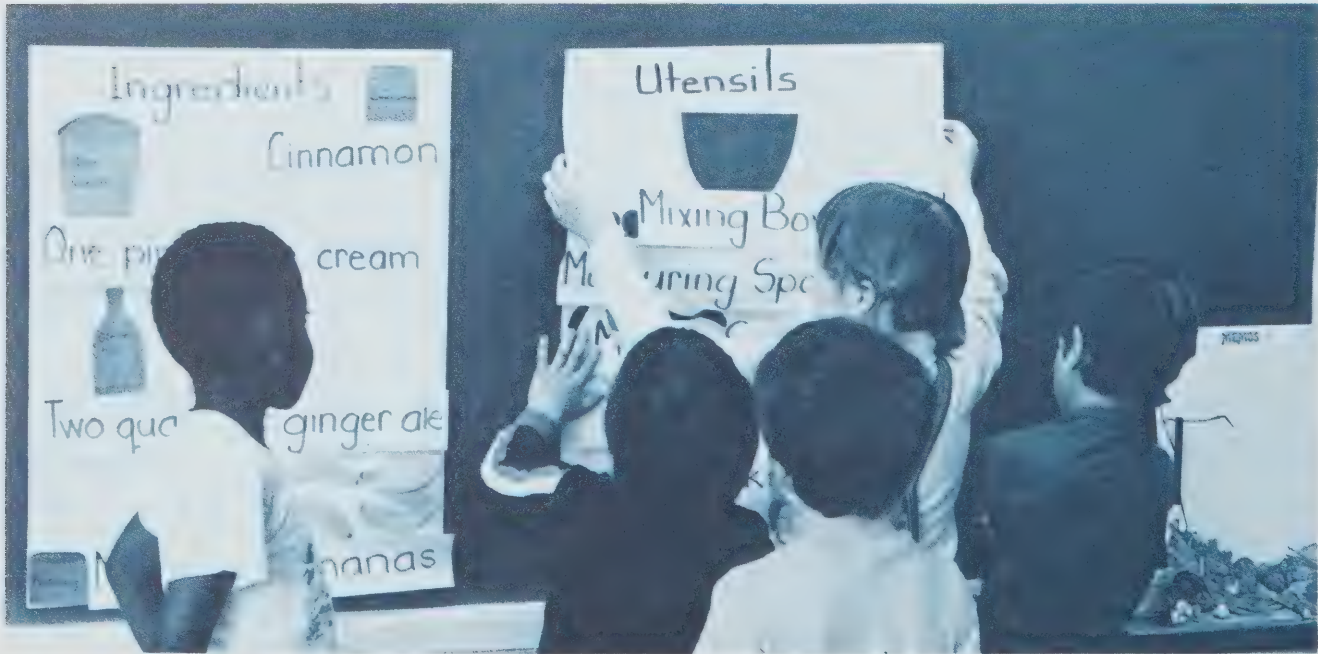
1. A boy with an auditory preference (7 years, Grade 2)

Good morn i to you
im ing Lad to see you
good morning
Hard w i k c i m GLAD to
see you.
good afternoon
work And s i n the
Afternoon
Go o d o l d Afternoon.
S W e t e d r e m s
at night

The writer is a personable boy who has an excellent vocabulary and is adept at speaking and reading. He moves slowly and dislikes colouring, cutting, printing, and doing class assignments without teacher assistance.

2. A boy with a visual preference (9 years, Grade 3)
This pupil loves arts and crafts, has a good colour sense, and is an enthusiastic athlete. He understands mathematical concepts easily and reads well. Although he enjoys listening to music, he only mouths words when singing. He is a very quiet boy, letting others do the talking for him. His oral language is garbled and difficult to understand. He has repeated a year of school.

The frist day of spring
the birds sang the birds sang
ther song. I saw some flowers
staring to grow. We had
some nice weather. It was a
bit cold. but we had a lot of
sunshin.



Mathematics and the Pupil With Learning Disabilities

Not all pupils with learning disabilities have difficulty with mathematics; frequently, however, they do have problems in this area as well. Careful assessment of learning disabled pupils' needs in mathematics is essential, since their problems may either be with mathematical concepts or with related language skills. As the definition of learning disabilities indicates, processing problems may interfere with mathematical performance. Any aspect of perceptual, motor, memory, and conceptual factors as well as the language skills of listening, speaking, or writing may be involved.

Assessment of a pupil's mathematical functioning may be conducted through diagnostic testing, formal standardized tests, examination of anecdotal records, or checklists. In this subject as well, teacher observation of classroom performance is a vital key to effective formulation of a plan of individual instruction. If a problem has been solved incorrectly, the teacher should ask the pupil to work it through orally. The teacher listens and questions to determine if the pupil has misunderstood the language of the question or has used mathematical concepts incorrectly. An assessment of levels of functioning to ascertain areas of proficiency as opposed to the application of grade norms is necessary if a plan of individual instruction is to evolve from the assessment procedures.

Suggestions for Helping Children Having Difficulty in Mathematics

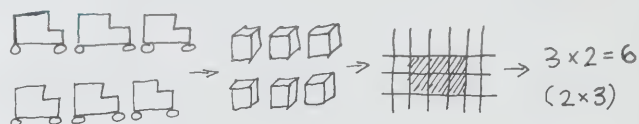
1. Instructional approaches and alternatives should be based on actual need rather than on the age or grade level of the pupil. To this end it is important that the teacher:

- test pupils to determine where they should be placed in an instructional sequence;
- base instruction on criterion-referenced testing;
- recognize variable developmental patterns;
- ensure that the pupil is ready to understand concepts such as classification, seriation, and conservation before introducing activities that require these concepts.

2. Methods that can be used with children having difficulty in mathematics include:

- using a multimedia instructional approach so that pupils may touch, view, manipulate, and experiment with materials while mastering concepts;
- encouraging the naming, matching, and making of basic shapes to prepare for geometry;
- varying language complexity to correspond to the progression in learning: from concrete $\longrightarrow$ semi-concrete $\longrightarrow$ semi-abstract $\longrightarrow$ abstract concepts; from known $\longrightarrow$ unknown material;
- introducing each concept using meaningful objects and materials: money, candy, and the pupils themselves may be used for counting, addition and subtraction, place-value, and problem-solving concepts;

- sequencing from concrete objects to structured mathematical aids (blocks, counters, abacuses, etc.) to representation (squared paper) to symbolization, with verbalization at each stage:



- having pupils verbalize concepts and then convert them into mathematical symbols;
- reinforcing concepts in relation to practical problems in everyday living such as shopping, cooking, using money, and determining the cost and time involved in travelling from one place to another.

3. Because successful performance encourages learning, the teacher should:

- design instruction so that skills are learned sequentially;
- ensure that prerequisite tasks are mastered before moving on to subsequent ones;
- assign tasks that pupils can perform with success. However, make sure that the tasks assigned offer enough challenge to promote growth.

4. Alternatives to the fixed frequency of questions in texts and workbooks should be provided by:

- modifying instructional materials so that pupils have more opportunities for varied practice, review, and repetition than are provided in texts and workbooks;
- devising different means of presenting concepts and having pupils practise skills;
- avoiding dependence on the dittoed page, text, or workbook as the main method of instruction and follow-up.

5. Instructional planning should include:

- supplementing the basic program to ensure mastery;
- using varied memory strategies to develop recognition, storage, and recall of concepts and skills;
- giving extensive and diverse practice in counting patterns, such as skip counting (1, 3, 5, 7, 9; 5, 10, 15), grouping, and forming sets;
- providing a wide variety of media, methods, and practice procedures;
- teaching for understanding of mathematical principles as well as rote skill in computation;
- encouraging the estimation process using pupils' heights and weights, costs of familiar items, etc.

6. Continuous assessment should be an integral part of the mathematics program.

7. The teacher should ensure efficient use of time and effort for both him-/herself and the pupils by:

- planning lessons so that neither teacher nor pupils have an excessive amount of homework;
- preparing lesson activities co-operatively so that pupils are involved;
- encouraging pupils' active participation in classroom activities in mathematics.

8. For additional support, pupils should be allowed to use:

- number lines on their desks;
- multiplication table cards;
- skip-counting cards;
- their fingers if they choose;
- counters;
- squared paper to stabilize place-value columns for computation questions;
- boxed questions on a worksheet page so items are isolated for individual attention;
- cues to indicate operational signs, place-value, and sequence of steps. Colour coding, arrows, dots, taped or written explanations, and charts containing step-by-step procedures may all be used for these purposes.

Teachers should consult *From Counting to Calculation* (Toronto: Ministry of Education, Ontario, 1976) and *Maps and Graphs* (Toronto: Ministry of Education, Ontario, 1976) for additional curriculum ideas in mathematics.



Introduction

Much has been written on the “second order disturbances” that may develop in children with learning disabilities as a result of constant failure experiences at school. A misunderstanding of the child on the teacher’s part or inappropriate teaching methods may engender fears and feelings of worthlessness in the child. Such feelings may be expressed in avoidance, and sometimes in rebellious and aggressive behaviour. Having learned to live with failure, such children may actually fear success, because it may lead to increased expectations that they are afraid they will not be able to fulfil. Some of them may react by becoming “victims”, or “class clowns”; others simply fade away, becoming the forgotten, “invisible” pupils in our schools. All these children need caring, consistency, and individualized learning if they are to learn to trust others and be successful.

The most effective teachers of reluctant learners are those who project a sense of genuineness, who are involved, who share themselves, and who assume that each pupil has dignity and worth. They understand that some pupils will need to test them to establish whether they really are genuine and worthy of trust. Sometimes this testing can be extensive and provocative, but the intent is always the same. The pupil is finding out if he/she is safe with this teacher in this classroom. Teachers should consult the support document entitled *Children With Behavioural Exceptionalities* (Toronto: Ministry of Education, Ontario, 1979) for additional guidance in this area.



Teachers who provide the best learning conditions for children with learning disabilities are well-informed about the learning characteristics of each pupil, consistent in their expectations, predictable in their positive attitude towards their pupils and yet able to express disapproval when necessary by differentiating between the pupil and his/her actions. Comments like “You’re lazy,” “You’re not trying,” or “You’re a bad boy” are non-specific and can be devastating. Effective teachers are able to recognize that some children have difficulty making appropriate choices or are impulsive to such a degree that they are often unable to explore the available options to a specific line of behaviour. They know too that these difficulties arise from an anxiety that encourages desperate responses. They therefore design their classrooms and activities around the principle of reducing anxiety by providing a consistent and structured learning environment in which the pupils know what is expected of them. This allows them to become freer to explore the range of options available to them and thereby to make more measured responses to situations.

The key to developing an anxiety-free classroom lies in teaching that is learner-based, individualized, consultative, and criterion-referenced. In this way the learner is centrally involved in decision-making concerning his/her school work. Everything is discussed and shared on the basis of each pupil’s cognitive and affective needs. This approach should in turn encourage such things as peer teaching. It is well established that children can learn as much from each other as they can from adults, so it makes sense for teachers to get this powerful influence working in the classroom on a carefully planned and organized basis.

Motivation

Many pupils who have experienced failure and some who have learning difficulties will have poor motivation. When pupils are rewarded, they are encouraged to do more. Conversely, when they are punished or continually experience feelings of failure in work or play, it is natural for them to avoid these situations. Many pupils with learning disabilities are so “turned off” that it is necessary to get them “turned on” again by building up their interest in school-related tasks and activities.

Teachers can develop motivation by providing extrinsic rewards (verbal praise, tokens, stars, stamps, treats, etc.) and can gradually foster intrinsic motivation (the pupil’s good feeling at the completion of a task) by stimulating the pupil’s internal drives for achievement and success. A sense of novelty and high levels of interest at the outset of a study task will also provide the impetus many pupils need to commit themselves to work.

Interactional Characteristics and Problems

Children with problems in social perception and in interacting socially may need to be taught how to interpret social situations and how to behave so that others will find it easier to accept them as friends. At the same time, it must be understood that inappropriate social behaviours such as unresponsiveness, resistance to change, emotional reactivity, impulsivity, and hyperactivity are often part of the learning disability rather than purposeful behaviour.

Teachers and parents working co-operatively can share information on the child's behaviour at school and at home. Together they can:

- develop a profile of the child's social skills and characteristics. This profile can be used to devise a plan that will improve the child's social functioning;
- clarify for the children the language used in social situations. Pupils with learning disabilities often have trouble understanding colloquialisms. These children need assistance in extending their understanding of such words beyond their literal interpretation;
- help each child understand the non-verbal signals he/she gives with his/her body. For example, a camera can be used to take classroom pictures of the children and the teacher. Pupils can then explore with the teacher the meanings of their facial expressions and body positions.
- make all interactional cues explicit. Children can be taught to use body language through puppets or by taking part in drama activities. See the document entitled *Dramatic Arts, 1980* (Toronto: Ministry of Education, Ontario, 1980) for further suggestions;
- explain how different voice tones can vary meaning. For example, "Yes" or "Oh" may express approval, surprise, dismay, or suspicion;
- model social situations and rehearse them with the child by talking through interactional behaviour and by role-playing such situations with the child;
- seek alternatives to undesirable behaviours;
- provide opportunities for peer-group interaction so that appropriate behaviours may be learned;
- establish communication among family members, teachers, and other professionals if necessary so that learned behaviours may be generalized to apply to many situations;
- evaluate measures taken to improve the child's social perceptions and behaviour to ensure effectiveness.

Teachers should consider the suggestions in the following section to help children learn appropriate social behaviours in a non-threatening environment.

Activities to Build Self-Esteem*

Teachers can develop self-esteem (a favourable self-image) in their pupils by providing them with:

- security
- affection
- consistent and reasonable management
- opportunities for success in tasks
- assurance and support in difficulties
- encouragement in self-reliance
- involvement in decision-making commensurate with each pupil's level of development
- opportunities for being responsible and for understanding one's own role and the roles of others
- opportunities for co-operation with and contribution to others

The following suggestions are specific activities that promote these objectives. Some of them may be most effectively and safely carried out through the use of puppets.

1. Have pupils form a circle. Instruct them to select a physical attribute (hair colour, eye colour, etc.) of the person to their left and make an "I like" statement to that person. When everyone has had a turn, have the children talk about how it feels to have someone say something nice about you in front of others. This activity can be repeated on subsequent occasions using specific characteristics ("I like the way Billy dances, sings, smiles, etc."); and non-physical attributes (sense of humour, generosity, gentleness, etc.).
2. Provide pupils with brown mural paper and crayons. Choose one pupil each day to lie down and be traced by a classmate. Have the other children help him/her colour in his/her portrait, keeping in mind specific body characteristics. On the figure, place important personal information – age, address, birth date, phone number, favourite subject, least favourite subject, hobbies, and interests. Display each figure as it is finished.
3. Cut smiling faces out of construction paper, leaving a space for writing. Give each child a face, and ask him/her to write a positive descriptive statement about the "pupil of the day" (the person chosen that day in activity 2). An example might be "Tom always shares." The faces should then be placed on the pupil of the day's mural. At the end of the unit or week, allow each pupil to take home his/her individual mural with the positive statements.

* Adapted from Grey County Board of Education, *Learning Disabilities* (Markdale, Ont.: Grey County Board of Education, 1978)

4. Obtain a scale and a metrestick. Divide the class into small groups and have the pupils weigh and measure each other. Place the results on a composite sheet. Compare likenesses and differences. Discuss the advantages and disadvantages of different characteristics: e.g., the tall girl can get into places others cannot. Keep the atmosphere accepting of all differences, always directing the pupils' thinking towards the positive.

5. Develop a learning centre by having the pupils bring in pictures of themselves as babies, toddlers, and as they are now. Divide a bulletin board in half. Place the baby and toddler pictures on one side and current pictures on the other side. Ask the pupils to try to match the pictures. Discuss as a group how everyone has grown and the changes that have taken place.

6. Get an ink pad and paper. Have the pupils make prints of their fingers and compare them with the prints of others. It will be interesting to them to see that no two are alike.

7. You will need small index cards and pencils. Pass out a card to each pupil, who then writes the statement "I am special." Place all the cards on a table where the pupils can examine them. Ask if each can pick out his/her own writing. Discuss how handwriting is usually very distinctive to each person and how the handwriting of different people, although it may be similar, is never exactly alike.

8. Have ready a tape recorder and blank tape. Each pupil reads and records a poem or short paragraph. Play the tape and discuss different voice qualities – high, low, fast, slow, accented, and so on.

9. Ask the pupils to bring from home a variety of articles, and pictures, relating to their special interests. Designate a day for exploring individual interests. Each pupil makes a hat depicting his/her particular interest from construction paper to which he/she attaches suitable items. Display the hats. Compare and discuss similarities and differences.

10. Make an "I Can" bulletin board. Each pupil cuts out a large star from construction paper. On their own stars pupils write the things they feel they can do well – "I can climb a tree," "I can read a whole book in one night," "I can write a good story." When the bulletin board is finished, the children can share what they put on their stars. Then ask the pupils to suggest "I Can" statements about others. This provides positive feedback regarding achievements and enhances self-esteem.

11. Prepare a duplicating master containing statements about feelings such as: "I feel angry when . . ."; "I am scared when . . ."; "My happiest time was . . ."; "I was excited when . . .". When the pupils have finished completing these, have them form a circle and share their statements.

12. Provide writing paper and pencils. Instruct the pupils to write riddles describing themselves. Read the clues for others to guess. An alternative activity would be to ask the pupils to write clues (positive) about one person in the room. (This should be assigned so that no one is left out.) Then all the pupils guess the answers.

13. Provide index cards. Discuss with pupils the ways in which they have thought and talked about themselves for the last couple of weeks, then ask them to write statements about themselves that others might not know. Statements can concentrate on the following categories:

- Things I like to do
- Things I don't like to do
- How I feel when . . .
- My interests are . . .
- People I like

This list can contain whatever is suitable for your class. Finished cards can be placed in an envelope and attached to each pupil's portrait to indicate that these are the inside things people might not know too easily. As the unit progresses, the pupils may add statements to their "Me" envelopes. Later you may want to ask your pupils to bring their envelopes to the circle and share some of their inside statements.

14. Provide large sheets of white paper, old magazines, paste, and scissors. Have the pupils search through magazines looking for pictures that describe themselves. These pictures can be about likes, interests, hobbies, actions, feelings. When they have gathered pictures, ask each to make a "Me" collage. Allow sharing time for each pupil to present his/her collage.

15. Ask the pupils to make a family tree on drawing paper, placing on the tree siblings, parents, grandparents, and so on. This activity strengthens the concept of belonging.

16. Have pupils form a circle. Choose one pupil at a time and ask the other pupils for reasons why that child is important or helpful to the class. The teacher may start after the first person is selected. Examples of statements could be: "Johnny is important or helpful to our class because he is always on time and ready to begin." "Susie is important because her smile makes us happy." This may appear to be a high-risk activity, but if the class has experienced a lot of positive feedback over the preceding weeks, you will be pleasantly surprised at the pupils' statements.

17. As a culminating activity, ask pupils to write a "Me" story about what they have discovered or become aware of in the last month. The title might be "What I Have Learned About Me".

The following additional strategies can be used to improve pupils' self-esteem:

1. Send daily or weekly "one-liners" to parents about the positive achievements of their children. These can be in the form of telephone or written messages. It is most important that their intent and structure be discussed with the parents beforehand. Telephone one-liners might consist of: "Good afternoon, Mr./Mrs. ---, I'm calling to let you know that John knew his multiplication facts to 5 today," or "Jenny worked very hard to complete her reading work. Thank you, I'll be calling again."
2. Write a short daily diary to each pupil. Pupils can be encouraged to write back or to initiate the interchange. The diaries are not intended to deal with serious *problems*. They are a means of social exchange between pupil and teacher. The following chart presents some examples:

<i>Teacher writes:</i> I really like your new brooch.	<i>Pupil writes back:</i> Thank you. My grandmother gave it to me for my birthday.
You seemed a little unhappy today.	We lost our dog last night and he hasn't come back yet.
I hope you have fun at the fair on Saturday.	I will!
<i>Pupil writes first:</i> I like your new shoes.	<i>Teacher writes back:</i> Thank you. It took ages for me to find them, but now I know it was worth it.
I went roller-skating on the weekend.	I bet you had a great time.

Hyperactivity: A Major Issue in the Field of Learning Disabilities

Many children with learning disabilities encounter social difficulties in school. These difficulties are either:

- rooted in their learning disabilities, causing social misperceptions; or
- an outgrowth of their frustration with school-related activities.

Children in the first category will often be socially "awkward". They may be viewed as outspoken, "different", and sometimes rude by both peers and teachers. Their behaviour often causes others to withdraw from contact with them. A frequent outcome is that the children become isolated and confused, are rejected by peers because of their "strangeness", and are seen as difficult and sometimes troublesome by teachers. The resulting disturbance may engender a variety of secondary behaviour patterns, one of which may be the extreme restlessness characteristic of so-called "hyperactivity".

On the other hand, some children may be inherently and significantly more active than others, perhaps because of metabolic factors. It has been suggested that some of these children are innately deficient in certain areas - that they have little or no sensitivity to others, awareness of cause-and-effect relationships, or understanding of the consequences of their own actions.

Children in the second category may have normal social perceptions, but their difficulty with school work may result in a variety of behaviours from withdrawal (acting in) to aggression (acting out).

Children in both categories may have experienced such a build-up of frustration that they have developed a distorted view of themselves and others. It is the teacher's role to help them gain more balanced perceptions, but in some cases the teacher cannot be effective without assistance.

In some cases, these children may be receiving medication from a physician to assist them to function in school. Teachers should carefully record the behaviour patterns of such children and maintain communication with the parents and physician concerned. The information thus shared should relate solely to the child's observed behaviour. Opinions should be based on the pupil's specific needs rather than the teacher's general feelings about medication.

Provision of appropriate support services is essential in these instances so that a comprehensive approach may be developed to meet the pupil's needs.

Teachers who observe pupils with restless or "hyperactive" behaviour should carefully determine the following:

- For how long can the pupil attend?
- Is there a difference in the kinds of tasks the pupil can and cannot attend to?
- Has this been the pupil's pattern of behaviour since he/she began school?
- Is there a discrepancy between in-school attention and out-of-school behaviour?
- Is the behaviour unique to this particular classroom or part of an overall pattern?
- Is the behaviour based on attempts at avoidance or is it involuntary, non-directed movement?

Guided by these questions and the information gained from them, the teacher can plan appropriate interventions. As a result of this questioning process, these interventions will be specific and meaningful, rather than general and diffuse. Examples would be rewarding the pupil when he/she is attending, co-operating, and working, thereby increasing the child's attention-span and study habits, avoiding reinforcing undesired activities by drawing attention to them, and reducing the stimuli that trigger off-task activity. It should be remembered that, if consistently applied, the teaching suggestions in this document will help to reduce hyperactivity in the classroom.

A note of warning should be sounded here. "Hyperactivity" has become fashionable jargon for any activity that annoys parents and teachers. Its use should be restricted to extreme behaviour only.

The Withdrawn Pupil

Although "hyperactive" behaviour may appear to be a more immediate matter for teachers to attend to because of its self-proclaiming and disruptive nature, withdrawn children may be far more at risk. Teachers should not forget these children. They should make a point of involving them in the activities of the classroom after attempting to:

- identify whether the withdrawn behaviour has developed recently or is long standing;
- determine if the behaviour is general or specific to a particular situation/task/activity;
- establish probable causes of the behaviour.

The above may be done in conjunction with parents and, if necessary, support services, bearing in mind that some children are naturally less outgoing than others. The teacher can help the withdrawn child to become more outgoing by:

- establishing a co-operative classroom atmosphere in which pupils learn to be sensitive and of assistance to each other;
- giving encouragement. Planning that ensures that the pupil experiences some success is essential;
- being sensitive to the pupil's needs. A demanding approach to involvement may cause the pupil to retreat further. Involving the pupil by degrees, at a rate at which he/she is reasonably comfortable, is generally the best method;
- finding out what interests the child. The teacher should recognize and encourage appropriate interests and assist the pupil to use them as a basis on which to build relationships with other children;
- using appropriate media to help the child express his/her feelings. Many children who otherwise experience great difficulty in expressing their feelings are often able to do so through a medium that is appropriate to their age. Puppets are ideal for this purpose with younger children. Role-playing can be very helpful for older children.

When a pupil becomes more comfortable in asserting him-/herself, he/she may sometimes act inappropriately. This is a natural consequence of the development of new behaviour and may be an essential part of the child's learning. Testing behaviour should be perceived as the pupil's attempt to find his/her own new boundaries, and although expectations and limits should continue to be upheld, this should be done with understanding.

For further suggestions on behaviour management, see *Behaviour: What We Can Do* (Toronto: Board of Education for the City of Toronto, 1979).



Books

Bush, W., and Giles, M. *Aids to Psycholinguistic Teaching*. 2nd ed. Columbus, Ohio: Charles E. Merrill, 1977.

This book contains a variety of activities and games for Kindergarten to Grade 8 pupils to assist in the development of the linguistic and psychological processes necessary for efficient learning. There is an index that directs teachers to arithmetic, phonics, and spelling activities, as well as a materials list containing the addresses of manufacturers providing equipment mentioned in the text.

Hallahan, D., and Kauffman, G. *Introduction to Learning Disabilities: A Psycho-Behavioral Approach*. Englewood Cliffs, N.J.: Prentice-Hall, 1976.

The authors give an historical overview of the field of learning disabilities. Acquisition of academic skills is discussed within a framework of psychological processing concepts and behavioural analysis. There are many practical teaching suggestions included.

Hammill, D., and Bartel, N. *Teaching Children with Learning and Behaviour Problems*. 2nd ed. Boston: Allyn & Bacon, 1978.

This text outlines extensive identification, assessment, and teaching techniques in the areas of language development, perceptual-motor skills, reading, mathematics, spelling, writing, and classroom management.

Kirk, S., and McCarthy, J., eds. *Learning Disabilities: Selected A.C.L.D. Papers*. Boston: Houghton Mifflin, 1975.

This is a collection of articles from papers presented at conferences of the Association for Children with Learning Disabilities. Current concepts and controversies in the field of learning disabilities are discussed.

Lerner, Janet W. *Children with Learning Disabilities*. Boston: Houghton Mifflin, 1971.

The emphasis in this book is on the development of teaching strategies for various disabilities. Theories and approaches to learning disabilities, diagnostic methods, clinical teaching, and teaching techniques and materials are dealt with.

Otto, W.; McMenemy, R.; and Smith, R. *Corrective and Remedial Teaching*. 2nd ed. Boston: Houghton Mifflin, 1973.

This book is intended for teachers who deal with learning problems in basic skill areas in regular classrooms. There are chapters on correlates of learning disability; approaches to diagnosis and remediation; the case study; various aspects of reading, spelling, arithmetic, listening, handwriting, and oral and written expression; and the teacher's role in remedial teaching.

Valett, R. *The Remediation of Learning Disabilities: A Handbook of Psycho-educational Resource Programs*. 2nd ed. Belmont, Calif.: Fearon, 1974.

Sections on gross motor development, sensory-motor integration, perceptual-motor skills, language development, conceptual skills, and social skills provide the teacher with resource programs for prescriptive use with learning disabled pupils. Each program contains a skill definition and educational rationale followed by a number of learning tasks and activities. Sample program worksheets, instructional materials, and evaluation aids are given for each resource program.

Wallace, G., and Larsen, S. *Educational Assessment of Learning Problems: Testing for Teaching*. Boston: Allyn & Bacon, 1978.

Part I of this book supplies insights into principles of educational assessment. Part II deals with specific practical techniques for assessment in the areas of early childhood, perception, spoken language, word analysis, reading comprehension, spelling, written language, arithmetic, and career education.

Wallace, G., and McLaughlin, J. *Learning Disabilities: Concepts and Characteristics*. 2nd ed. Columbus, Ohio: Charles E. Merrill, 1979.

This book serves as a basic text on learning disabilities. Discussions of diagnosis, educational provision, parent involvement, and current controversies are presented. Many charts, tables, diagrams, pictures, and samples of pupils' work are included to illustrate teaching materials and techniques. Of particular interest are sections on early childhood, the adolescent, and the adult with learning disabilities.

Wiederholt, J.L.; Hammill, D.; and Brown, R. *The Resource Teacher*. Boston: Allyn & Bacon, 1978.

The resource room concept is analysed and explained in depth in this book. Part I deals with the resource room teacher's role, program implementation, pupil selection procedures, and instructional management. Part II provides extensive individual programming suggestions with regard to language skills and classroom behaviour. Analysis of pupil performance within the educational milieu is emphasized.

Selected Professional Periodicals

- Academic Therapy*, 28 Commercial Boulevard, Novato, California 94847.
- The Arithmetic Teacher*, 1906 Association Drive, Reston, Virginia 22091. Publication of the National Council of Teachers of Mathematics.
- Elementary English*, 1111 Kenyon Road, Urbana, Illinois 61801. Publication of the National Council of Teachers of English.
- Exceptional Children*, 1920 Association Drive, Reston, Virginia 22091. Publication of the Council for Exceptional Children.
- Journal of Learning Disabilities*, 101 East Ontario Street, Chicago, Illinois 60611.
- The Journal of Special Education*, 1115 - 5th Avenue, New York, New York 10003.
- Learning: The Magazine for Creative Teaching*, Education Today Company Inc., 530 University Avenue, Palo Alto, California 94301.
- Learning Disability Quarterly*, c/o Dr. D. Deshler, Department of Special Education, 435 Herbert C. Miller Building, University of Kansas Medical Center, 39th and Rainbow Boulevard, Kansas City, Kansas 66103. Publication of the Division for Children with Learning Disabilities of the Council for Exceptional Children.
- The Reading Teacher*, 800 Barksdale Road, Newark, Delaware 19711. Publication of the International Reading Association.
- Special Education in Canada*, c/o Dr. Shirley Inrig, Simcoe County Board of Education, 251 Patterson Road, Barrie, Ontario L4N 3W3. Publication of the Canadian Committee of the Council for Exceptional Children.
- Teaching Exceptional Children*, 1920 Association Drive, Reston, Virginia 22091. Publication of the Council for Exceptional Children.

Multimedia Resources

Videotapes

The Puzzle Children. The 3M Company, 1977. Colour, 60 min, 1/2-inch open reel or 3/4-inch cassette.

Julie Andrews and Bill Bixby explain the nature of learning disabilities in a program produced for American television.

Available from:
The 3M Company of Canada Limited
P.O. Box 5757
London, Ontario
N6A 4T1
(519) 451-2500
or
The Ontario Association for Children
with Learning Disabilities (OACLD)
1901 Yonge Street
Suite 504
Toronto, Ontario
M4S 2Z3
(416) 487-4107

A Different Understanding series. OECA.

This is a series of five videotapes dealing with children with various problems. The series is accompanied by print material for teachers and parents.

The Invisible Handicap. BPN 164102. Colour, 30 min. Expiry date: January 14, 1984.

This videotape looks at the questions that experts and researchers in the field are struggling with.

I Was a Kid Who Couldn't and Now I Can. BPN 164104. Colour, 30 min. Expiry date: February 23, 1984.

This videotape deals with the importance of imagination in developing programs for children with problems.

A Question of Codes. BPN 164103. Colour, 30 min. Expiry date: March 16, 1984.

The identification and assessment of learning disabilities today - and future possibilities in the field.

Tag Along. BPN 164105. Colour, 30 min. Expiry date: June 1, 1983.

The story of a family whose eight-year-old daughter isn't fitting in.

What Do You Do With a Kid Like That? BPN 154101. Colour, 30 min. Expiry date: January 28, 1983.

The drama of Tony, an adolescent with many problems.

Available from:
The Ontario Educational Communications Authority
P.O. Box 200, Station Q
Toronto, Ontario
M4T 2T1
(416) 484-2600

Sound Filmstrips (Filmstrip, Audiotape, and Script)
A Walk in Another Pair of Shoes. California Association for Neurologically Handicapped Children, 1972. 35 mm, colour, 18 min 30 s.

A Walk in Another Pair of Shoes, narrated by Tennessee Ernie Ford, is an audio-visual production designed to explain to children some of the problems encountered by neurologically handicapped children. The emphasis is on how it *feels* to be handicapped and how a normal child can be of assistance to a handicapped friend.

Available from:
California Association for Neurologically
Handicapped Children
P.O. Box 4088
Los Angeles, California 90051

Everybody Has A Song. California Association for Neurologically Handicapped Children, 1978. 35 mm, colour.

Everybody Has A Song, narrated by Henry Winkler, is an audio-visual production designed to help the learning disabled child understand why he/she is in a special class and how he/she may benefit from it; and to help the learning disabled child believe that he/she is a valuable person who can look forward to a fulfilling and productive future.

Available from:
"A Song"
P.O. Box 2006
Sacramento, California 95822

Films

On normal language development:

Behaviour Equals You. National Film Board, 1972. 16 mm, colour, 14 min.

This animated film deals with the development of behavioural patterns from infancy.

Out of the Mouths of Babes. National Film Board, 1973. 16 mm, colour, 28 min.

This film outlines how children learn to speak.

On learning disabilities:

Early Recognition of Learning Disabilities. Churchill Films, 1969. 16 mm, colour, 30 min.

Children with learning disabilities stand out clearly in daily classroom activities. This film, which deals with the Primary years, provides a stimulus for discussion.

Why Billy Couldn't Learn. Churchill Films, n.d. 16 mm, colour, 45 min.

This film portrays the assessment, retraining, and behaviour of children with learning disabilities in the Junior grades. The wide range of problems in the field is demonstrated.

Both films are available through:
National Audiovisual Center
National Archives and Records Services
Washington, D.C. 20409

or
The Ontario Association for Children
with Learning Disabilities (OACLD)
1901 Yonge Street
Suite 504
Toronto, Ontario M4S 2Z3
(416) 487-4107

Children Without Words. BBC, 1969. 16 mm, colour, 40 min. Distributed by the National Film Board.

This film deals with children who have difficulty in comprehending language. Some find written language meaningless. For others, speech has no significance. This film shows classical methods of teaching such children to live in a highly literate society.

Note 1: Parts of these audio-visual materials may be seen as displaying a lack of sensitivity towards developmentally handicapped people.

Note 2: Many of the films available on learning disabilities, including the two listed above, were produced several years ago when the field was in the process of developing. School boards should watch for newer film listings and contact distributors for information on the latest releases.

- Affective.* Pertaining to emotion.
- Associative memory.* The process of relating or connecting concepts and remembering them.
- Auditory closure.* The process of recognizing the meaning of spoken language when parts are missing.
- Auditory clues.* Spoken aids to learning.
- Auditory discrimination.* The process of distinguishing differences in sounds.
- Auditory memory.* The process of remembering what is heard.
- Auditory symbolization.* The comprehension and meaningful use of sounds and spoken language.
- Auditory receptive language.* Communication received aurally.
- Clinical assessment.* An individualized approach to understanding a pupil's unique methods of learning and of processing information.
- Closure.* See "Auditory closure" and "Visual closure".
- Cognitive.* Pertaining to the processes of knowing and thinking.
- Context strategies.* Methods of understanding the meaning of a new word from the language that surrounds the word and establishes its meaning.
- Criterion-referenced testing.* Testing that compares present with previous performance of specific tasks. No comparisons beyond this are involved.
- Cues.* Prompts.
- Directed thinking activity.* A teaching process in which pupils are led through material in a specific sequence.
- Directionality.* Awareness of left and right so that direction may be established.
- Expressive language.* Means of communication with other people.
- Feedback.* A sensory process by which the individual monitors his/her own performance.
- Fine motor.* Pertaining to small-muscle activity, such as that involved in writing or drawing.
- Finger-slide.* A three-way process of learning to read: the child looks at the words, follows them across the page with one finger, and listens to the teacher reading them.
- Gross motor.* Pertaining to large-muscle activity, such as that involved in physical exercise.
- Language processing.* The internal mental functions that an individual uses to understand, organize, and retain information.
- Mnemonic devices.* Methods of association of images, words, or ideas to assist memory.
- Modality.* A sensory channel through which the individual can receive meaningful information.
- Mode.* Method of communication using one or more sensory channels.
- Multimodal.* Pertaining to communication using all sensory channels.
- Norm-referenced testing.* Testing that rates how a pupil performs with reference to age or grade.
- Overlearning.* The process of ensuring that material is learned by thorough mastery.
- Perception.* The conscious mental registration of a sensory stimulus.
- Recall.* See "Retrieval".
- Reception.* The taking-in of information through the sensory channels.
- Receptive language.* Means of receiving, organizing, and integrating communication from others.
- Reinforce.* Emphasize and strengthen through practice.
- Retrieval.* The process of reproducing information from memory.
- Revisualization.* The process of seeing a mental picture called up at will.
- Self-concept.* An individual's opinion of him-/herself.
- Storage.* The process of retaining information for later use.
- Structural analysis.* Examination of similarities and differences in word roots and affixes.
- Syllabication.* Division of words into syllables.
- Tactile-kinesthetic.* Pertaining to touch and muscular movement.
- Verbalization.* Expression through spoken language.
- Visual closure.* The process of recognizing objects, letters, and words from an incomplete visual presentation.
- Visual clues.* Aids to learning that are perceived by sight.
- Visual discrimination.* The process of detecting, by sight, differences in objects, forms, or letter symbols.
- Visual imagery.* Mental pictures that the individual creates or recreates. *See also* "Visualization" and "Visual memory".
- Visualization.* The process of creating a picture "in the mind's eye".
- Visual memory.* The process of remembering what has been seen.
- Visual sequencing.* Organization of information received by sight in a specific order.
- Visual symbolization.* The meaningful use of written symbols (e.g., letters, numbers).
- Written expressive language.* Communication by writing.